California's Petroleum Situation

Status and Actions

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Presentation Topics

- Petroleum infrastructure – key elements
- Crude oil – overview and production
- Imports & exports – historical perspective
- Forecasts of California transportation energy demand
- Projected imports – clean fuels & crude oil
- CEC Website - Update
- CEC Activities on behalf of California Consumers
- Q&A

Petroleum Infrastructure

Petroleum Infrastructure – Key Elements

- The petroleum "infrastructure" consists of several interconnected assets operated by a combination of private and common carrier companies
  - Refineries
  - Pipelines
  - Marine terminals
  - Storage tanks
- Crude oil and petroleum product infrastructure assets are separate and distinct from one another – not interchangeable
- Unlike with the electricity distribution system, Northern California is not directly connected to Southern California

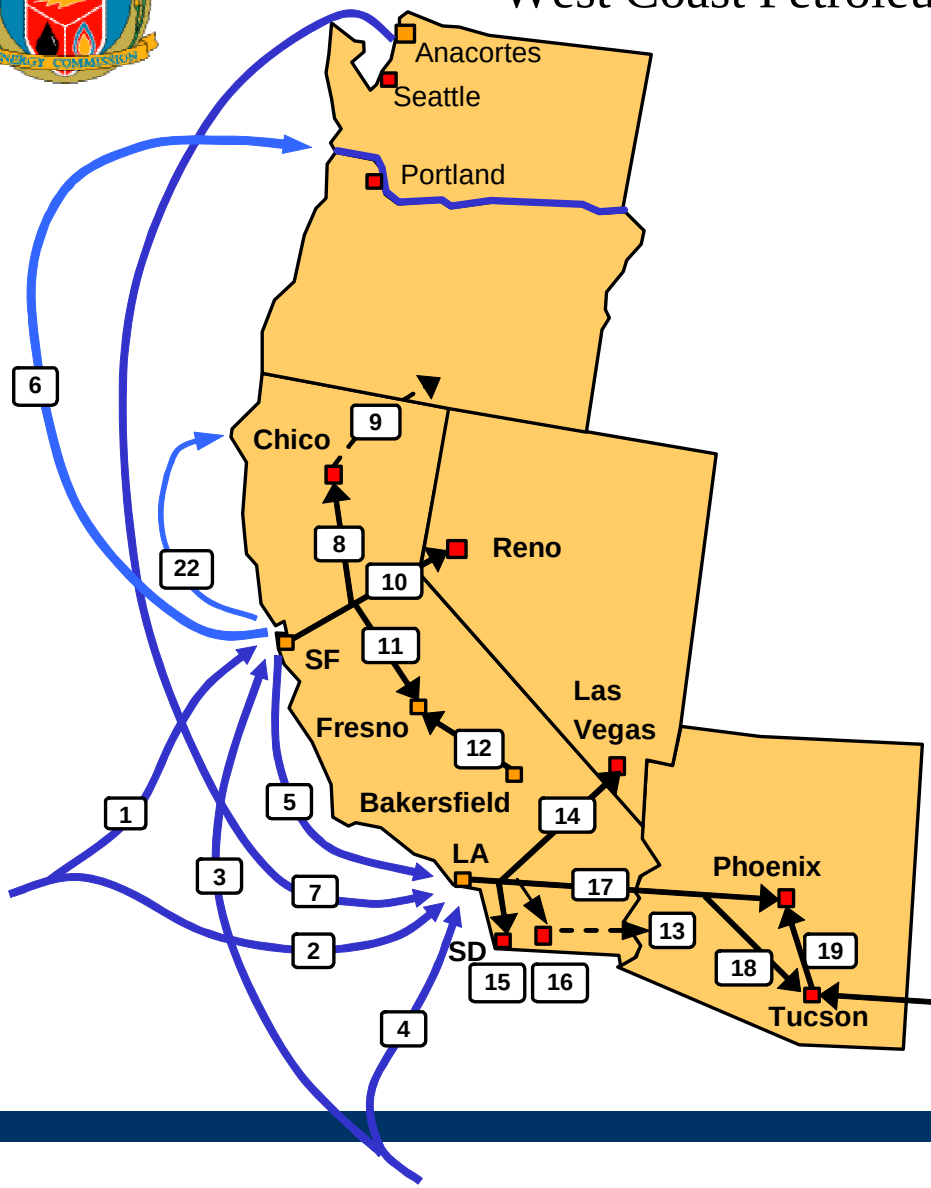
Key Elements - Refineries

- Refineries are a primary hub of logistical activity
  - Raw materials imported & finished products shipped
- Crude oil is received by pipelines and marine vessels
- Process units operate continuously at or near maximum capacity, except during periods of planned maintenance or unplanned outages

Key Elements – Refineries (cont)

- Output from the refineries is usually placed in intermediate tanks prior to blending the finished products
- The majority of gasoline, diesel and jet fuel is shipped from the refinery by pipeline to over 70 distribution terminals
- Most of the refineries dispense a smaller portion of their output into tanker trucks that are loaded at the refinery

West Coast Petroleum Flows



1 Foreign Imports into Northern California
2 Foreign Imports into Southern California
3 US Gulf Coast Imports into Northern California
4 US Gulf Coast Imports into Southern California
5 Ship/Barge - San Francisco to Los Angeles
6 Ship/Barge - San Francisco to Portland
7 Ship/Barge - Washington to Los Angeles
8 Kinder Morgan - San Francisco to Chico
9 Truck - Chico into Southern Oregon
10 Kinder Morgan - San Francisco to Reno
11 Kinder Morgan - San Francisco to Fresno
12 Kinder Morgan - Bakersfield to Fresno
13 Truck - Imperial into Western Arizona
14 Kinder Morgan - Los Angeles to Las Vegas
15 Kinder Morgan - Los Angeles to San Diego
16 Kinder Morgan - Los Angeles to Imperial
17 Kinder Morgan - Los Angeles to Phoenix
18 Kinder Morgan - Los Angeles to Tucson
19 Kinder Morgan - Tucson to Phoenix
20 Kinder Morgan - El Paso to Tucson
21 Longhorn Pipeline - Houston to El Paso
22 Ship/Barge - San Francisco to Eureka

Key Elements – Pipelines

- Pipelines are used throughout the distribution infrastructure to interconnect key elements
- Intra-state pipelines are used to convey petroleum products within California's borders
- Interstate pipelines are used to export transportation fuels to Arizona and Nevada
  - NV – Nearly 100% of supply in 2004 (153 thousand barrels per day)
  - AZ – Nearly 62% of supply in 2004 (147 thousand barrels per day)
- Pipelines usually include pump stations, break-out tanks, storage tanks and distribution terminals
- Pipelines normally traverse multiple jurisdictions and require longer periods of time to acquire all of the necessary permits

Key Elements – Marine Facilities

- Marine facilities are located in sheltered harbors with adequate draught to accommodate typical sizes of petroleum product tankers and crude oil vessels
- Wharves usually have adjacent storage tanks that are used to temporarily hold petroleum products prior to transfer to a subsequent location
- Most refiners operate a proprietary dock
- Third party storage provides access to majors and independents
  - Kinder Morgan
  - Kaneb Terminals
  - Chemoil
  - Petro-Diamond

Key Elements – Storage Tanks

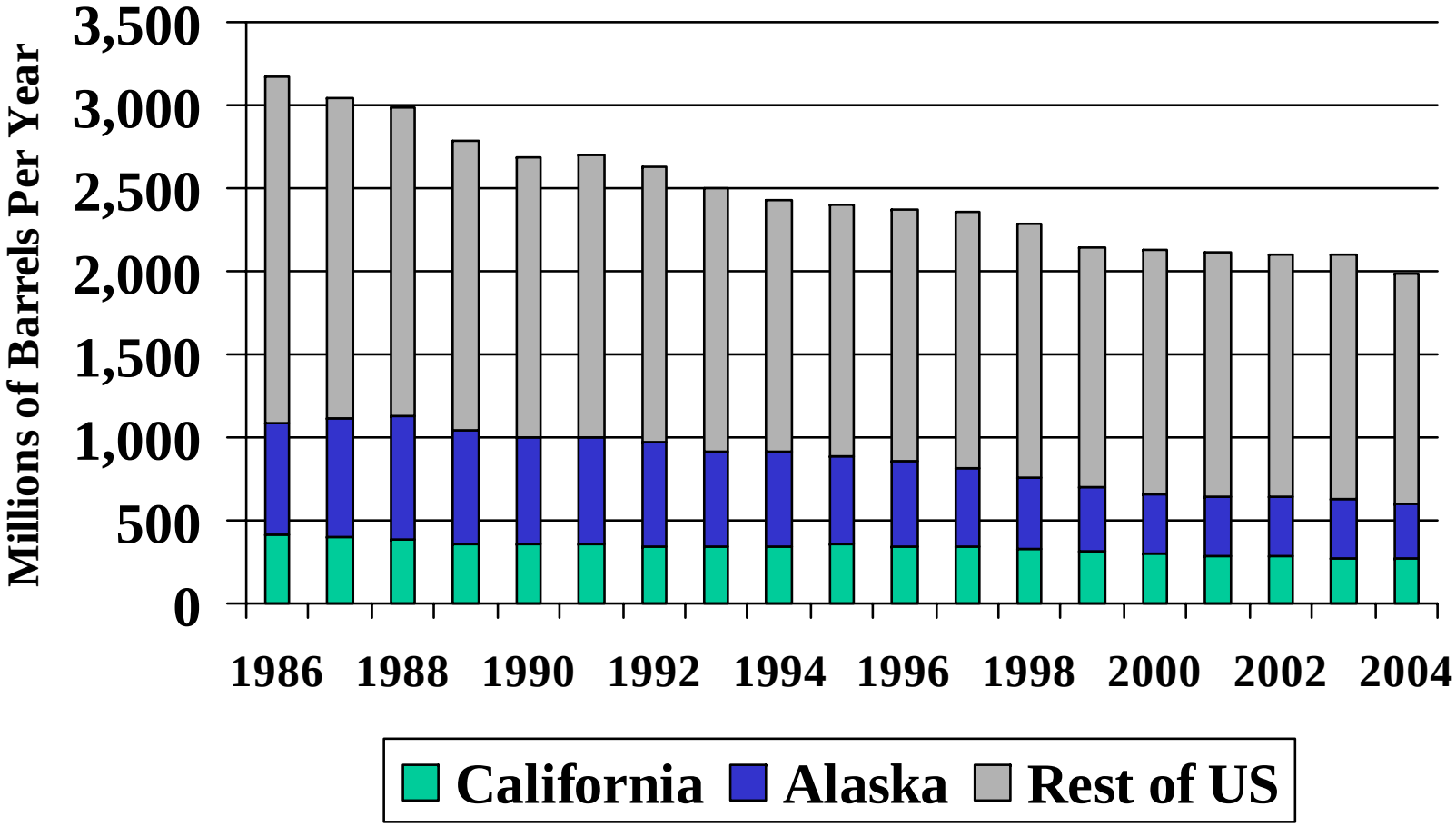
- Storage tanks are vital to the continuous flow of petroleum products into and through California
- Tanks are located at docks, refineries, terminals and tank farms
- Tanks serve different storage purposes:
  - Unload marine vessels
  - Receive pipeline shipments
  - Feed truck loading facilities
  - Hold inventories in advance of planned maintenance
  - Strategic storage that can be used for emergencies or periods of rapid price increases

Crude Oil

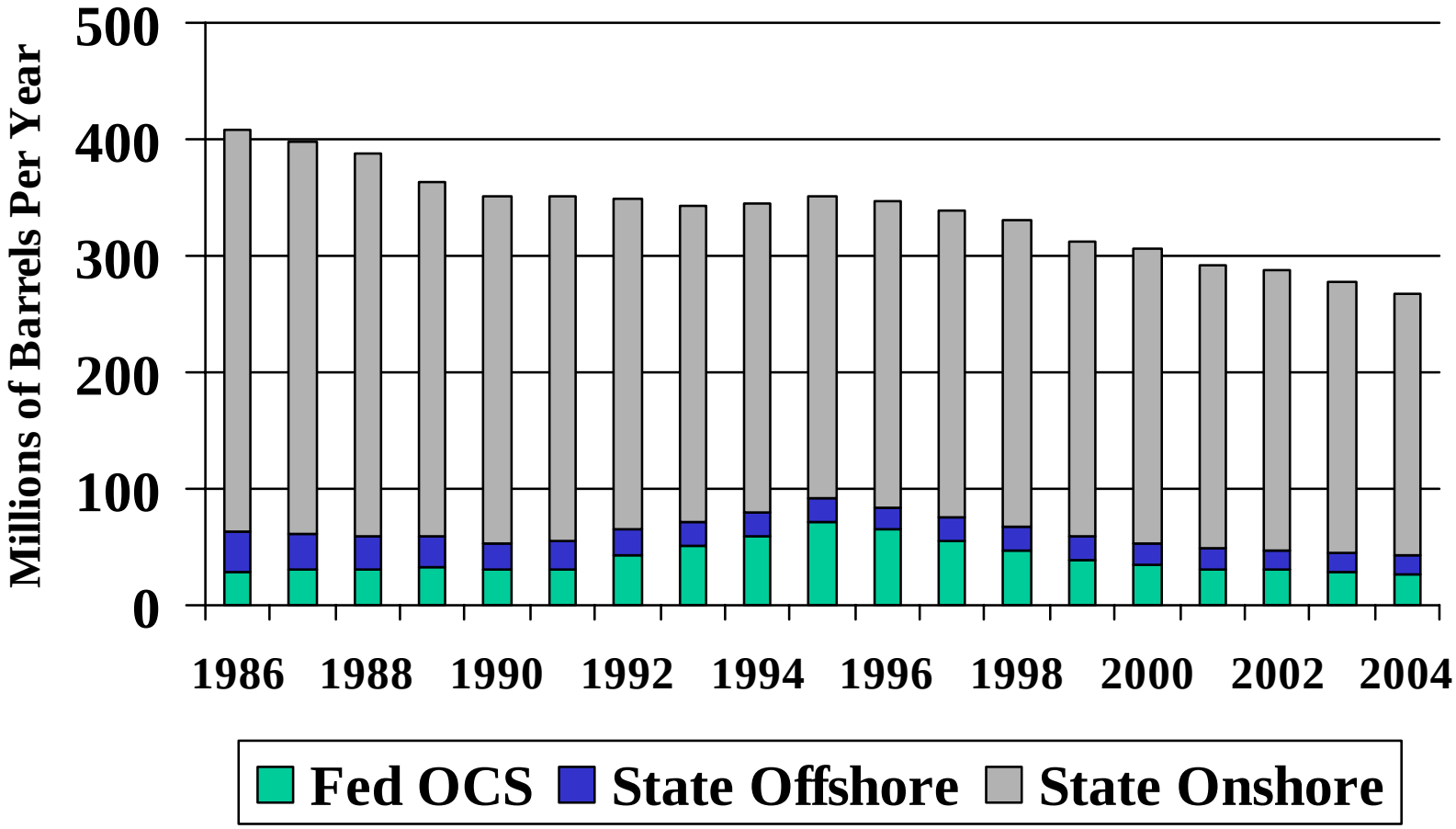
Crude Oil - Overview

- Global demand for crude oil estimated to top 84 million barrels per day for 2005
- U.S. refiners processed over 15.5 million barrels per day during 2004
  - Crude oil imports 10 million barrels per day, 65 % of supply
- California refiners processed 1.8 million barrels per day during 2004
  - California 42% (750 TBD)
  - Foreign 36% (652 TBD)
  - Alaska 22% (388 TBD)
- Declining California production will be replaced with crude oil delivered by marine vessel
- Crude oil processing by California refineries expected to gradually increase, referred to as “refinery creep”

United States Oil Production
1986 to 2004



California Oil Production
1986 to 2004

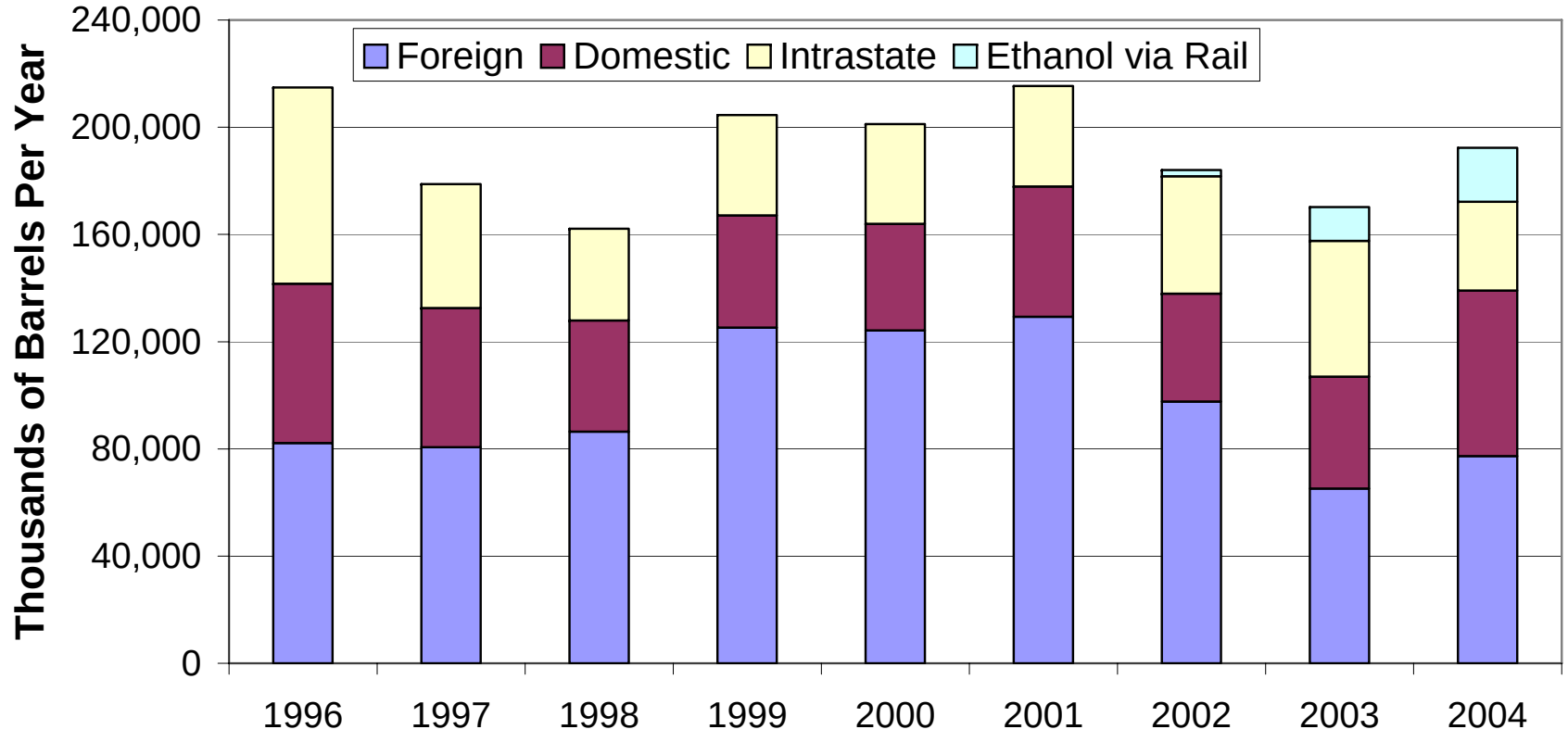


Crude Oil Production

- 2004 U.S. crude oil production 1.98 billion barrels or 5.4 million barrels per day
- 2004 California crude oil production 268 million barrels or 732 thousand barrels per day (TBD)
  - 4th largest U.S. crude oil producer behind Louisiana, Texas, and Alaska
  - 43 % enhanced recovery, mostly steam injection
- California crude oil production has declined 34 % since 1986, Alaska 51 % and the rest of U.S. by 34 %
  - Alaska output remained steady between 2000 and 2003, reversing a declining trend that had continued for a decade
  - Although Alaska output declined by nearly 7 % last year
- California crude oil production declined 19 % between 1998 and 2004, despite the fact that the value of oil increased by 210 %

Imports & Exports

California Petroleum Combined Movements Refinery Feedstocks, Blending Components and Finished Products (Excludes Crude Oil) 1996 through 2004



Imports & Exports - Historical

- California shifted from a net exporter of finished petroleum products (transportation fuels) by marine vessel to a net importer in 1997
- Imports of petroleum products are generally increasing while exports are continuing to decline
  - Combined marine imports increased by 61% between 1996 and 2001 before declining 25% between 2001 and 2004
    - 103 million barrels in 2004 or 281 thousand barrels per day (TBD)
  - Combined marine exports declined by 36% between 1996 and 2004
    - 36 million barrels in 2004 (98 TBD)

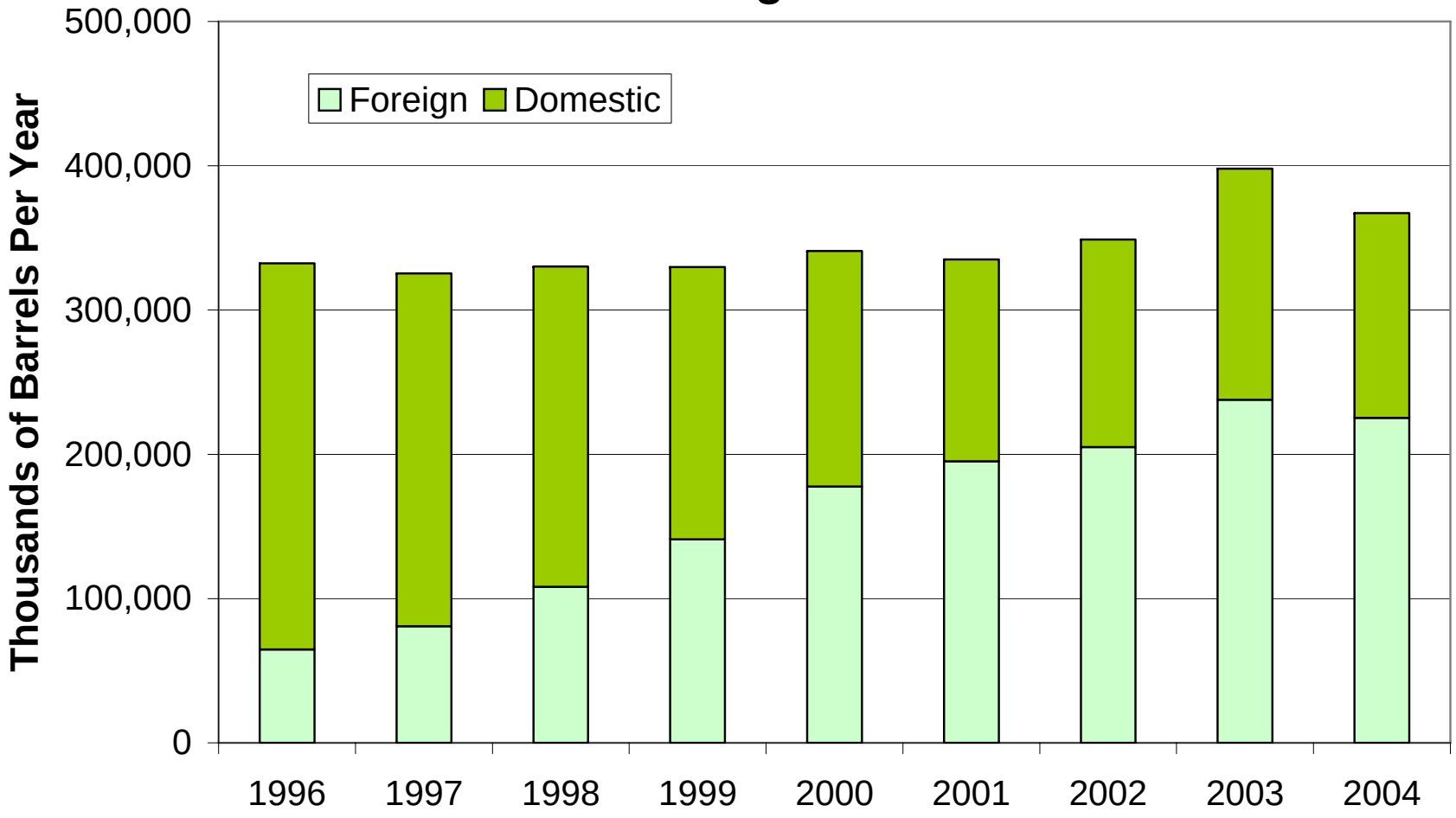
Imports & Exports – Historical (cont)

- Exports and imports of like petroleum products use similar facilities
  - Ships loading products occupy dock space and can prevent another vessel from unloading a cargo of fuel
  - Domestic movements – 62 million barrels in 2004 or 169 TBD
  - Foreign movements – 77 million barrels in 2004 or 210 TBD
- Intrastate movements also contribute to congestion at docks
  - Barges are a primary means of transport
  - Intrastate movements – 33 million barrels in 2004 or 90 TBD

Imports & Exports – Historical (cont)

- Various factors impact these petroleum product totals
  - Refinery reliability
    - Greater number of outages/planned maintenance can increase need for imports & intrastate movements
  - Health of the economy
    - Jet fuel imports declined 12 million barrels between 2000 and 2002
  - Improved efficiency through exchange agreements can help
  - Modest refinery projects also contribute incremental supply

California Crude Oil Imports
1996 through 2004



Imports & Exports – Historical (cont)

- Imports of crude oil have increased as California crude production fell and refineries processed additional oil
- Total imports of crude oil have only increased 10.5 % between 1996 and 2004
- Imports of Alaska crude oil declined a total of 47 % between 1996 and 2004
- The largest increase has been for foreign crude oil imports
  - 16.8 % per year increase
- Total imports of crude oil in 2004 declined 7.8 % compared to 2003
  - Refinery maintenance work greater than normal resulted in a decline of crude oil processing for the year

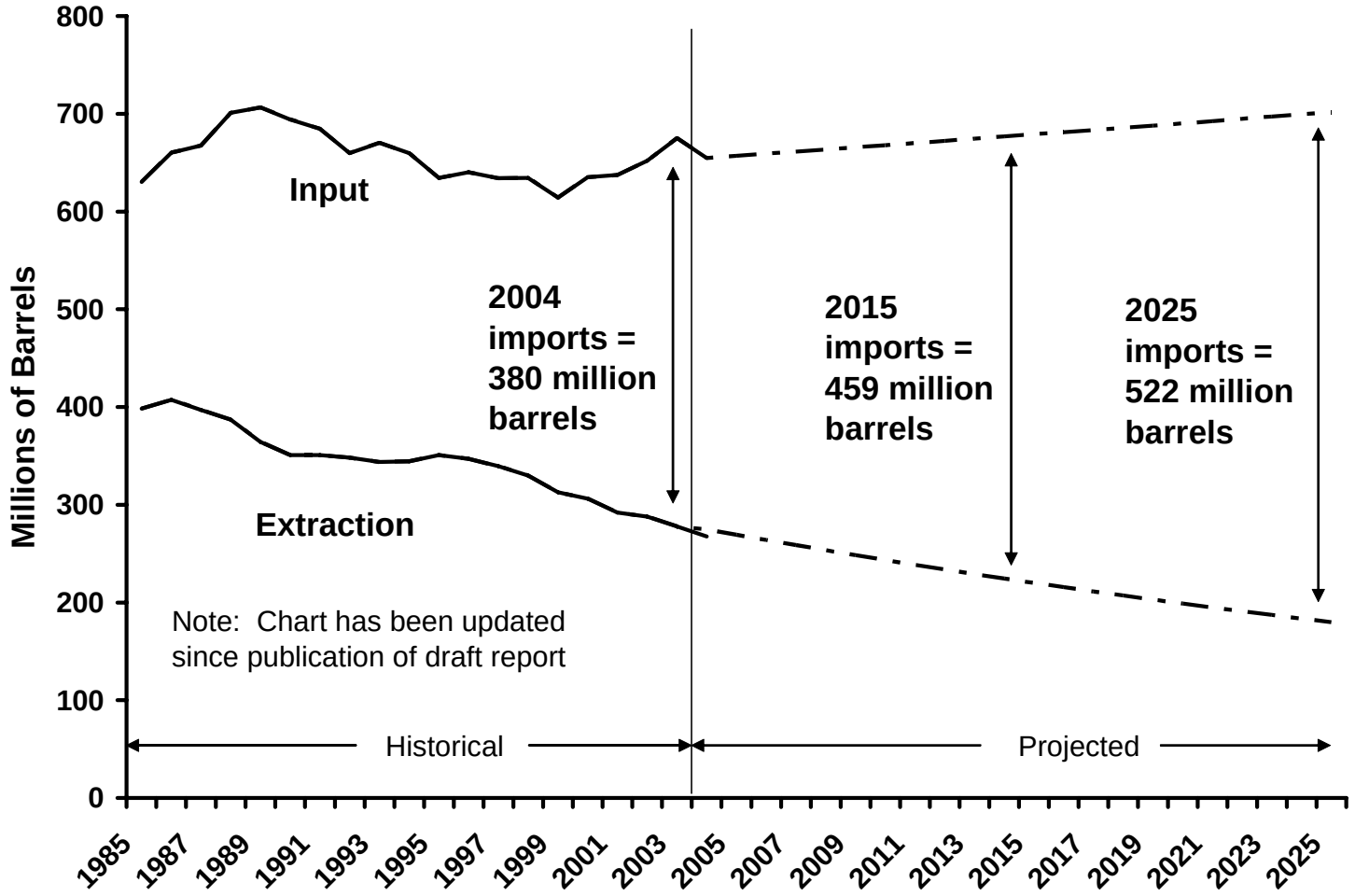
California Transportation Energy

Fuel Types and Sectors

- Gasoline
- Diesel
- Electricity
- Natural Gas
- Commercial Jet Fuel

- Freight
- Transit
- Commercial Aviation
- Private light-duty vehicles
- Commercial light-duty vehicles

Crude Oil Import Projection



Information for Consumers

- CEC Website (www.energy.ca.gov)
  - Ways to reduce fuel usage (Updated)
  - Flex Your Power At the Pump – www.fypower.org/save_gasoline/ (Updated)
  - Gas Price Complaint Form (NEW)
  - Q & A – Gasoline Facts (NEW)

CEC Activities

- Daily, Weekly and Monthly Reporting
- Gas Price Complaint Monitoring
- Coordination with other Agencies
  - Attorney General
  - Air Resources Board
  - Consumer Affairs
- Coordination with Other States
  - National Association of State Energy Officials
- Coordination with Federal Agencies
  - EPA
  - DOE

CEC Activities (Cont.)

- Investigation of Gasoline Price Movements
  - Detailed Report to Governor, Legislature and Other Agencies in 30 days
- Examination of options to increase total production volume 5 – 10%
- Awareness and Education
  - Expanded use of Flex Your Power At the Pump Campaign
- More detailed data filings from Refiners
- Increase Use of Alternative Fuels
  - Report to Governor by 3-31-06
- Research and Development of new tools